

# Strategic Energy Plan for Maryland

Recommendations of the  
Governor's Energy Task Force

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William Donald Schaefer  
Governor

1993



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Dear Fellow Marylander:

As a citizen interested in energy issues, I am pleased to send you this copy of my Energy Task Force's recommendations, Strategic Energy Plan for Maryland.

I called for a Statewide Energy Summit in 1991. At that Summit I challenged participants to think creatively and provide recommendations to me for energy efficiency opportunities in Maryland. At the same time, I instructed the Maryland Energy Administration to implement energy efficiency improvements designed to reduce the cost of State government and make Maryland a leader in using alternative fuels.

At the conclusion of the Summit, I appointed an Energy Task Force to review the deliberations of the Summit and to analyze energy issues affecting Maryland. The Task Force spent many hours--over a year and a half--analyzing the issues and preparing this plan. I think you will find the recommendations contained in this plan full of opportunity. The members of the Task Force and its Chairman, Michael J. Chesser, have my thanks for a job well done.

Energy efficiency improvements are vital for the proper management of our State government and will help us to foster economic growth, environmental improvement, and greater security of energy supply. I welcome your support in helping me continue to ensure energy efficiency in Maryland.

Sincerely,

A handwritten signature in cursive script that reads "William Donald Schaefer".  
Governor

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## **SUMMARY**

### **Energy Efficiency and Economic Development**

One of the most crucial challenges facing America in the 1990's is the need for a revitalized economy. A strong U.S. economy is a prerequisite for dealing decisively with the federal deficit, creating jobs, and enhancing our competitiveness in the global economy. And this revitalization must take place in a way that protects our environment.

Maryland faces the same challenges at the state level. It also has a significant amount of human and technical resources invested in defense-related industry, at a time when a national consensus has emerged to shift resources away from defense and toward domestic concerns. Maryland must not only become more competitive economically, it must also change the nature of it's economy.

The Strategic Energy Initiatives presented in this document - focused on innovative energy supply and improved efficiency in all sectors - can help Maryland spur economic growth, protect it's environment, and develop a business base that will carry the state into the next century. These Initiatives should lead to lower energy costs - lower production costs for business, and lower utility bills for homeowners. Utility conservation and demand-side management programs create work for a wide variety of contractors and increase sales for dealers of energy efficient products.

At the same time, the recommended Energy Initiatives will lead to reduction of pollution associated with producing or using energy, whether that be at power plants, in furnaces, or in automobiles. Within its borders, Maryland has the seeds of viable, new environmental industries - for example, alternative fueled vehicles and solar technology - that minimize environmental impacts without necessarily reducing energy use. Support for such industries now can fuel job growth and offer technology conversion/worker retraining options for defense-related industries. The central concern is to optimize energy use in a way that helps to stimulate the economy while protecting the environment.

### **Public-Private Partnerships - Pursuing the Common Goal**

A new age of cooperation between government, business, nonprofit organizations, and citizen groups has dawned, as all have begun to discover their common interest in investing in the future. Innovative financing strategies have also developed, such as shared-savings contracts, whereby businesses that cannot afford the up-front costs of energy-efficient equipment can obtain this equipment if they are willing to share the dollar value of the resulting energy savings with a third party willing to finance the improvements.

A number of the Strategic Energy Initiatives call for public-private ventures - business, government, and/or citizen groups contributing to specific projects that will yield benefits for all. A clear example of this approach is reflected in the recommendation for a Center of Industrial Energy Efficiency that will provide Maryland industry with technical assistance and information related to ways to improve the efficiency of various industrial processes. Start-up funds are to come from the state, and the Center is to be self-supporting through the contributions of participating member industries. The public-private partnership approach is also recommended for a training program for commercial/industrial facility managers (public coordination, private funding), for a series of community energy showcases to demonstrate the advantages of a community-wide approach to promoting energy efficiency, and for several initiatives targeted at increasing the use of renewable energy in the state.

These Strategic Energy Initiatives were developed through a cooperative effort involving citizens and business representatives from a wide variety of sectors in the economy. Such an approach not only maximized the chances that the group's resulting recommendations would be practical and acceptable to all sectors, but also served as a paradigm for the type of cooperation that would be needed to address Maryland's energy, environmental, and economic problems.

### **Leveraging Existing Efforts**

The Initiatives try to leverage and build on existing efforts, wherever possible. Reinventing existing projects is not an option for a fiscally constrained state government. A number of the Strategic Energy Policy Initiatives make use of the utility collaborative concept and the existing utility regulatory structure. One calls for the creation of a broad-based Strategic Energy Policy Working Group to investigate a totally integrated energy planning process that would address all fuel types. Others recommend a coordinated utility approach to improving the efficiency of new residential construction, and expansion of utility rebate and loan programs to include new technologies, equipment maintenance, and improvements to low-income housing.

Other Initiatives build on established networks or specific projects already underway. A training program for commercial/industrial facility managers responsible for HVAC maintenance may be piloted at Howard Community College, under the auspices of the chairperson of the Maryland Community College system, to facilitate rapid expansion of the program to community colleges statewide, if successful. Energy showcase communities in a number of cases may build on existing projects (or planned projects) already developed by utility companies. Rather than focus exclusively on efficient housing and demand-side management programs, these communities may include use of automated electricity distribution, energy management systems, dispersed generation, and customer information services. Inclusion of transportation-related measures such as energy-wise land use and natural gas vehicle fueling stations will further open the door to significant energy savings and reductions in harmful emissions.

**Setting Realistic Goals and Removing Barriers to Efficiency**

It is difficult to make progress in something as vast and amorphous as improving energy efficiency and environmental quality without specific, realistic goals that are the result of a consensus of the major sectors in the state. The Initiatives call for a focused study of Maryland's current energy situation, followed by the establishment of goals in a variety of areas, based in part on the recommendations of the broad-based Strategic Energy Policy Working Group mentioned earlier.

Other Initiatives are targeted at removing barriers to energy efficiency. Within state and local government, allowing agencies to retain some of the savings that result from making energy efficiency improvements, rather than merely reducing their energy budgets, provides a real incentive for government agencies to take conservation actions. The public's energy use habits and attitudes, as well as a lack of awareness and understanding, are major barriers to improved efficiency. The Initiatives attack this problem in the short term, through a major public awareness campaign and the energy showcase communities, and in the long-term, through educational programs in the school system.

**Jobs and the Environment - Another Kind of Partnership**

The Strategic Energy Initiatives link the need to protect the environment to the need for a strong economy. The Initiatives call for the appointment of a full-time official in the Department of Economic and Employment Development, responsible for promoting environmental and energy efficiency-related products and services in Maryland. A business-to-Business Green Guide and a "Green" Yellow Pages for consumers are recommended to increase visibility of "environmental" firms. The development of public-private partnerships and other types of support are recommended for the conversion of defense-related industries to high-tech transportation products such as a magnetic levitation transportation (MAGLEV) and commercially viable electric vehicles. Similar support is recommended for projects and firms related to the use or production of renewable energy technology.

In general, the Initiatives favor voluntary, cooperative mechanisms over mandatory, unilateral ones, link improvements in efficiency and environmental quality to economic growth wherever possible, build on existing efforts, attempt to leverage any additional funding that is required, and focus on both long-and short-term solutions to the state's energy problems.

**THE PROCESS FOR DEVELOPING THE STRATEGIC ENERGY POLICY INITIATIVES****A Statewide Energy Summit**

In early 1991, Maryland Governor William Donald Schaefer issued an Executive Order creating an Energy Sub-Cabinet and introduced legislation to establish a Maryland Energy Administration. The state legislature passed this legislation in the closing days of the 1991 session. This activity reflected a firm commitment on the part of the governor to establish a strong energy policy and conservation ethic in Maryland, with state government leading by example. A strategic energy policy for Maryland, combined with strong conservation practices in Maryland's transportation, residential, commercial, and industrial sectors, can keep the state's environment and economy healthy into the next century.

To initiate the development of energy policy options, the governor convened a Maryland Energy Summit on Tuesday, May 21, 1991. The purpose of the summit was to bring together Maryland citizens, elected officials, industry representatives, government leaders, environmentalists, and public advocates with an expertise and interest in energy issues to develop a set of energy options for the state.

At the Summit's opening plenary session, Governor Schaefer charged the group with developing policy recommendations accompanied by practical short and long-term implementation strategies. Over 400 participants met for one full day in eleven topic-specific workshops. The primary recommendations they developed were compiled in a Summary of the 1991 Maryland Energy Summit report.

**The Governor's Energy Task Force**

Governor Schaefer then convened a smaller, but equally representative group, called the Governor's Energy Task Force, in September 1991. He charged this group with exploring the Energy Summit recommendations and the issues they raised, and creating a set of substantive, realistic initiatives with specific implementation steps. Michael Chessser, Vice President of Marketing for Baltimore Gas and Electric Company, was appointed chairman of the Task Force.

Four subcommittees of the Task Force were formed - each with it's own chairperson who also served on a Steering Committee - to develop specific initiatives pertaining to each of four areas:

- \* Transportation (Chairman Andrew J. Parker, Jr., P.E., President, Sypher: Mueller, Inc.)
- \* Buildings (Chairman Robert Grantley, Vice President of Customer Services for Potomac Electric Power Company)
- \* Industry (Chairman Roger Redden, Esq., Piper & Marbury)
- \* Future Energy Supply (Chairman William I. Weston, Professor, University of Baltimore School of Law).

Other key individuals - including Anne Eisele of Baltimore Gas and Electric (industrial subcommittee), Michael Panich of Antares Group, Inc. (transportation subcommittee), and Suellen Weisberg of Columbia Mall, Inc. (buildings subcommittee) - played an important coordinating role for their respective subcommittees. In addition, as each subcommittee's recommendations took shape, it became obvious that certain recommendations were relevant to more than one topic area (for example, educational efforts). A new "cross-cutting issues" topic subcommittee was formed, chaired by Patricia Lane of the League of Women Voters.

After numerous meetings of both the Task Force and it's subcommittees, at which issues were discussed and presentations by topic-area experts were made, the Task Force released it's preliminary recommendations. While the subcommittee finalized implementation "action steps" for each recommendation, copies of the recommendations were sent to all who attended the Energy Summit, as well as state agencies and other interested parties, for comments. The Task Force reviewed the comments received and, where applicable, incorporated them into the final document.

The final Task Force recommendations appear on the following pages. They do not address all energy-related policy issues facing the State of Maryland, but they do represent substantive, realistic approaches to wide range of energy issues on which a general consensus of the Task Force members could be reached. The Task Force is pleased to submit these recommendations for consideration by Governor Schaefer.

On January 5, 1993, Governor William Donald Schaefer endorsed these recommendations and further charged the Task Force with assisting in the continued development, implementation and monitoring of necessary action steps.



# **STRATEGIC ENERGY INITIATIVES FOR MARYLAND**

**Recommendations of the  
Governor's Energy Task Force:**

**Future Energy**

**RECOMMENDATION #1**

**Set goals for energy diversity and efficiency to support a strong Maryland economy.**

To maintain a growing and productive economy in Maryland, while improving environmental quality and providing a secure economic future, a diversified energy supply conserved by increases in energy efficiency and reductions in non-productive energy use must be fostered. To guide efforts to achieve this overall objective, two specific actions are recommended:

**Quantification of Goals:**

Provide the tools and information necessary for strategic energy planning and assessment at the state level.

**Resources Needed:**

**Human:** This recommendation will require MEA staff and consultant support to put the systems in place. After the systems are in place, MEA will need to continue to provide staff to maintain the data base and models developed, as well as conduct specific analyses supporting strategic planning and regulatory decision making.

**Implementation Strategy:**

1. Develop and maintain a data base and analytical tools to monitor energy supply and use in the state, project trends in energy demand and supply, and model the effects (costs and benefits) of federal, state and private actions to change supplies and demand.

Before realistic goals can be set for Maryland's energy future, an assessment must be made of how energy is currently being used in the state. It is necessary to compile this information, create a data base in which to store the data, and develop analytical tools to monitor current use, project future use, and estimate the effects of various actions that may be taken to influence supply and demand. These steps will provide the necessary capability for evaluating rational energy supply and demand goals, as well as the data against which to measure progress toward those goals. At a minimum, the system that is developed should address:

- current energy consumption, supply and efficiency for each of the economic sectors, and within each sector (sectors should include industry, transportation, and residential and commercial buildings, as well as utility companies; consumption by state government should be desegregated from other consumption so that separate goals for state government can be set and progress toward those goals monitored. To the extent feasible, consumption within each sector should be monitored at the end-use level, e.g., portion of building's energy consumption attributable to heating equipment, cooling equipment, cooking, lights, etc.)
- projected energy demands, supply and efficiency for each sector of the economy
- impacts, by sector, on supply, demand, efficiency, environmental emissions, economic growth, tax base and revenues, and employment due to changes in the use of alternative energy supplies, improved conversion systems, and demand-side management/conservation measures fostered by state and private energy initiatives
- measures and accounting methods for the effects of specific state energy initiatives on energy supply, demand and efficiency
- specific measures of reduced consumption of strategic resources (e.g., petroleum) for energy supply and fuels with a high degree of environmental impact.

MEA should be responsible for developing and maintaining the data base and analytical tools, performing the required analyses, evaluating trends, and preparing reports. The Maryland PSC should be a key provider of data for utilities and assist in the analysis of trends in energy use in that sector. The Maryland Department of General Services (DGS) and Department of Transportation (DOT) should provide energy use data for state facilities and fleets. MEA should report project status and findings on a biannual basis to the governor, the Energy Subcabinet, the General Assembly, and the Strategic Energy Policy Working Group (see Recommendation #2).

2. Establish realistic but aggressive and quantitative goals for diversifying energy supplies and conserving energy use.

The setting of such goals will establish the state's commitment to leading efforts to achieve the overall energy diversity and economic vitality objective described above, and will provide the necessary criteria to gauge progress toward that objective. The goals should seek to ensure that Maryland has a reliable, competitively priced, adequate supply of energy to meet the demands of economic growth. At a minimum the following goals should be set and promulgated:

- reductions of non-renewable energy use per capita in the residential buildings sector and per square foot in the commercial buildings sector
- reductions of combined non-renewable energy use and environmental emissions per unit of output (or per constant dollar of output) in the industrial sector, including the electric power and thermal energy producers
- reductions in combined non-renewable energy use and environmental emissions per capita and per ton of goods moved in the transportation sector
- specific goals for the increased use of renewable fuels/energy resources, including biomass fuels, photovoltaics, solar thermal energy, and passive solar design
- specific goals for the increased substitution of new (more efficient, less polluting) technology for existing facilities that use conventional fuels/energy resources.

Once the Strategic Energy Policy Working Group is established (see Recommendation #2), it should work with MEA in setting rational goals for energy supply and conservation, as well as providing inputs regarding the practicality and comprehensiveness of analyses of future energy supply, economic impacts, and projected environmental benefits.

Within twelve months MEA should prepare a full energy status report addressing current energy resources and trends in consumption and end uses, as well as the likely economic and environmental impacts associated with specific strategies for resource diversification and conservation.

**Related Initiatives Underway:**

An analysis of current electricity use at state facilities is being completed by the Maryland Energy Administration.

**Related Subcommittee Recommendations:**

*Recommendation #2: Establish a Strategic Energy Policy Working Group comprised of individuals representing a broad range of perspectives, to investigate a totally integrated energy planning process that addresses all fuel types.*

**RECOMMENDATION #2**

**Establish a Strategic Energy Policy Working Group comprised of individuals representing a broad range of perspectives, to investigate a totally integrated energy planning process that addresses all fuel types.**

The Working Group should address difficult-to-resolve issues such as:

- tax structure impacts on energy decision-making
- the impact of decisions regarding various energy resource options on economic development and employment, public health, the economic well-being of various market sectors, the environment, energy supply/availability, and other social/political areas of concern.

A key consideration of the Working Group should be to broaden the concept of integrated resource planning to extend beyond regulated utilities to include liquid and solid fuels (including refuse-derived fuels), as well as energy distribution systems (such as district heating and cooling) and dispersed generation. The Working Group should also consider the role of government institutions in the state in a fuller integrated energy resource planning system.

The Strategic Energy Policy Working Group should present its recommendations to the governor's subcabinet for energy. The Least-Cost Planning section of the Maryland PSC should continue to serve as the focal point for integrated resource plans.

**Implementation Strategy:**

**Short-Term**

1. MEA should be assigned responsibility for coordinating and supporting the Working Group's efforts. The Working Group should be comprised of four components:
  - Government agencies
  - Energy suppliers (including utility companies, independent power producers, coal companies, oil and propane distributors, renewable energy equipment suppliers, and others)

- Public interest groups (including environmental groups, consumer groups, and others)
  - Business energy consumers.
2. The Working Group should complete a review of energy planning approaches currently taken in Maryland and by other states, as well as model processes being developed by the U.S. Department of Energy and others, and make preliminary recommendations. This review will require funding of a study team to gather and analyze the required information and report to the Working Group. The group should also present policy options concerning the degree to which "market oriented" approaches versus "central planning" approaches should be used to influence energy resource and use decisions.

**Long-Term**

3. Within 18 months the group should present suggestions for strategic energy policy legislation in Maryland to the governor, the Energy Subcabinet, and the General Assembly.

**Related Initiatives Underway:**

- Annual submittal to the PSC of data from the long-range plans of each of Maryland's electric utilities, including the following information:
  - a description of the electric utility planning process
  - estimated peak load and energy sales
  - a description of existing resources; identification of the need for additional ones
  - new resource option identification, screening and cost-effectiveness evaluation
  - a recommended long-range integrated resource plan and short-term implementation plan
  - compliance plans for the Clean Air Act Amendments of 1990
- Annual review by the Maryland PSC of utility plans, resulting in a report titled *Ten-Year Plans of Maryland Electric Utilities*
- Demand-side management collaboratives for each Maryland electric utility, involving the utility, the PSC, customers, and other interested stakeholder groups (including the Maryland Department of Natural Resources)
- Existing integrated resource planning for electricity and natural gas.

- A process initiated by Department of Natural Resources and Public Service Commission to examine the social costs of energy generation and consumption.

**Related Subcommittee Recommendations:**

**Recommendation #1:** *Set goals for energy diversity and efficiency to support a strong Maryland economy.*



**RECOMMENDATION #3**

**Develop and implement action strategies to increase the Maryland Department of Environment recycling goal from the current 20% of the volume of refuse to over 50%, set a goal for source reduction for the state, and promote use of recycled products.**

To attain this goal aggressive efforts will be needed to stimulate demand for recycled products. These products should include paper, containers, building products, asphalt, etc. Increase the use of recycled products by providing a budget allowance of up to 15% for state agencies to use in purchasing recycled products when the cost of those products is higher than the cost of the standard (non-recycled) versions of the products. Recycling and source reduction are important components of an energy reduction program for the state, and state government should lead by example.

**Quantification of Goals:**

Recycling collections should be increased to 50% by 2000, statewide.

**Resources Needed:**

**Human:** New Recycling Commission appointed (see Specific Action Step #1)

**Implementation Strategy:****Short-Term**

1. A new statewide Recycling Commission, with broad participation, should be constituted to address source reduction and develop specific strategies to increase the use of recycled products. It should be led by the Maryland Energy Administration. The Commission should also work closely with DEED to encourage remanufacturing businesses to locate in the state.
2. DEED, working with appropriate local government agencies, should strive to increase demand for recycling products by encouraging new and relocated industry to use recycled materials in their products. These new industries should be located as close to the material sources as possible. DEED should also help promote companies making or selling these products to purchasing departments and the community at large.

3. Whenever possible, encourage increased participation of smaller, local businesses offering recycled products in state and local procurement.

**Long-Term**

1. State of Maryland procurement officials should continue to purchase a wide range of products with recycled content, to include recycled automotive oil and antifreeze, retread tires, all paper products, plastic items, construction products, and road and roofing materials. Recycled products should contain post consumer waste of at least 50% for paper, and the percentage of paper with recycled content should be increased to 80% by 1995.
2. The Governor's Executive Recycling Working Group should coordinate the development of a system that encourages the procurement of products with the highest recycled content and which are remanufactured locally.
3. DGS should share information on recycled/remanufactured product availability with state and local government purchasing agents on a quarterly basis.
4. Regulatory agencies can and should specify increasing amounts of recycled contents in assorted products.

**RECOMMENDATION #4**

**Establish an energy showcase program, involving several host communities across the state.**

The selected hosts would serve as working demonstrations of the ability of communities to grow and live comfortably at significantly reduced levels of non-renewable energy use. The showcase would employ a mix of energy/resource conservation, load management, and renewable energy measures appropriate for the host community. Each showcase would require the cooperation and resources of the regional utility, community government, local developers and builders, energy equipment/service suppliers, community service organizations, and the Maryland Energy Administration. Federal, state and local government facilities should be among the demonstration sites to be included in each showcase.

The emphasis of the showcase would be on demonstrating currently viable renewable energy supply systems and energy efficiency, conservation, and control measures. The combined effects on community energy consumption would provide a realistic gauge of the ability of Maryland communities to achieve energy goals formulated by MEA in accordance with a separate Energy Task Force recommendation.

**Each showcase should demonstrate appropriate measures from each of the five general categories listed below (sample options for each category are also shown):**

- **Building systems energy efficiency**
  - high performance windows
  - high efficiency heating and cooling equipment
  - improved building insulation systems
  - high efficiency lighting systems
- **Transportation systems efficiency**
  - fueling stations for alternative fuels
  - improved access and availability of public transport systems
  - provision of facilities for telecommuting offices

- **Modular renewable energy supply systems**
  - solar heating systems for both residential and commercial hot water supply needs
  - photovoltaic power systems
  - wind power systems
  - power systems operated on biomass-derived fuels
- **Interactive energy delivery systems**
  - utility-controlled cycling of gas- and electricity-driven heating, cooling, and process equipment
  - real-time energy pricing feedback systems
  - utility integrated modular generation and cogeneration sources
  - use of renewable resources for building heating through district heating
- **Community planning and resource recycling programs**
  - materials recycling programs
  - packaging and other source reduction programs
  - community and state coordinated rider-sharing programs
  - model land-use planning methods for achieving improved energy efficiency (including community walking/biking paths, grid-like road systems, and location of businesses within the communities to minimize commuting)

**Quantification of Goals:**

Establish three showcase projects in communities geographically dispersed in the state, within three years.

**Resources Needed:**

**Human:** The recommendation will require personnel resources of the state, and of participating utilities, communities, and builders or developers, to plan, promote and implement the projects.

**Technology:** The technologies of interest span the spectrum of modular distributed renewable energy supply systems, energy efficiency measures for buildings and transportation, and load management and control. The emphasis will be on technologies that are on the leading edge and are proven. The objective is to demonstrate the increased level of efficiency obtainable by integrating distributed supply systems, building system improvements and transportation systems within the community and the utility systems serving the community.

**Funding:** All of the technologies to be demonstrated are to be cost effective on a life cycle basis and are to pay for themselves in savings of energy costs. However, since most of the measures to be demonstrated will require capital investment, some form of state or utility financing assistance may be warranted to encourage communities and/or developers to make the extra investment for long-term savings.

**Implementation Strategy:**

**Short-Term**

1. Maryland's public utilities and appropriate state agencies work together to identify candidate communities for the showcase project.
2. Establish a state fund for showcase project financing. Investigate DOE, HUD and EPA grants to support the financing program.
3. Canvas suppliers of energy systems in Maryland for interest in offering equipment at cost, to participate in the showcase projects.
4. Investigate opportunities to collaborate with other showcase/demonstration programs such as the decorators showcase, smart house demonstrations, and the Hunt Valley distributed generation project.

**Related Initiatives Underway:**

- Utility energy conservation and load management programs underway in all utilities serving communities in the state. Programs provide customers with technical and in some cases financial assistance.
- Maryland Main Street Community Program supports community revitalization and redevelopment.
- Montgomery County project to integrate energy factors into land use planning. Department of Environmental Planning will soon be field testing the energy impact assessment methodology.

**Related Subcommittee Recommendations:**

**Recommendation #1:** *Set goals for energy diversity and efficiency to support a strong Maryland economy.*

**RECOMMENDATION #5**

**Stimulate public-private partnerships to speed introduction of more efficient supply technologies for using conventional fuels and renewable resources.**

While Maryland continues to rely most on fossil fuels for its energy supplies, it must begin a transition to raise the efficiency of its energy supply and delivery systems and to introduce cleaner sources of energy in all sectors. It must also increase its reliance on renewable energy. In this way, Maryland will conserve existing fuels, increase its energy security, and help protect the environment.

Substantial barriers remain, which prevent new technologies from entering energy markets as quickly as desired. The state has a key role to play in identifying the institutional and economic barriers that prevent positive change in the energy sector in Maryland. Working closely with the private sector, the state can identify and implement policies that will overcome these strategic barriers. Such partnerships should include industry, private citizens, environmental groups, utilities, and financial institutions. For the state's part, it must review carefully its own procurement and regulatory processes to encourage changes that will properly balance risk and security in Maryland's energy future.

A key objective of the partnerships will be to foster demonstrations and deployment of cleaner and more efficient ways to use fuels for electric power production, transportation, and energy-intensive industrial processes. Great potential also exists in the building sector to apply new technologies and techniques to raise building efficiency. The partnerships should be used to demonstrate market-ready and new, centralized and distributed renewable energy technologies, including solar, wind, biomass, geothermal, and hydroelectric systems.

Through its partnerships, the state can take steps to help major industries, including electric power producers, participate in federal government cost-shared, clean, high efficiency demonstration projects. These include the Clean Coal Demonstrations and the Advanced Turbine Systems Program for utility power generation, applications of distributed photovoltaic and solar thermal energy systems, and joint ventures authorized in the Renewable Energy and Energy Efficiency Technology Competitiveness Act of 1989.

**Implementation Strategy:**

1. Streamline permitting processes for projects that demonstrate clean, highly efficient use of fossil fuels and biomass energy resources.

2. Permit utilities to rate-base the costs of demonstrating new technologies in their systems.
3. Provide low-cost loans through such means use of the state bonding authority to help cover the incremental costs of projects that achieve significant reductions in emissions through the use of high efficiency conversion of fossil fuel and renewable energy systems.

Possible public-private partnership opportunities with regard to renewable energy follow:

1. Take a lead role in implementing the Chesapeake Photovoltaic Initiative, to promote the use of photovoltaic systems in the production of electricity for all sectors.
  - The Maryland-District of Columbia-Virginia Solar Energy Industries Association originated this initiative and should work with the Maryland Energy Administration to gain other cosponsors from other government agencies, the federal government, the utility industry, environmental organizations, industry and public interest groups.
  - Assign joint responsibility for the Initiative to the trade association and one other entity (public or utility), establish a budget, compile the resources, and begin to carry out the agenda of the Initiative.
  - Hold an Initiative review meeting in summer 1993, and have an Initiative progress report delivered to the Maryland Energy Administration at the end of 1993.
2. Initiate a State Buildings Solar Installation Program, to encourage the use of solar energy as a fuel source for state facilities and to ensure that existing solar installations are maintained for optimal performance.
  - Solar energy is already contributing to the energy supply of various state government facilities in Maryland. The Maryland Energy Administration should work with the solar industry trade association to compile the performance records of these installations, and design a program for encouraging solar installations on new state facilities and for locating solar retrofit opportunities. These can include water heating, space conditioning, pool heating, and remote or "demand-side" electricity production.
  - The governor should require that all existing solar installations at state facilities be inspected and, if they are not functioning properly for lack of maintenance or repair, brought up to operating status. Only cost-effective refurbishments should be ordered, with MEA and the solar industry association working together to define "cost effective."



- The governor should mandate that at least two state facilities have a solar design approved before the end of 1993. MEA should take the lead role in soliciting and negotiating a model long-term energy sales, shared energy savings contract with a private vendor that bundles energy conservation and renewable energy technology for a state facility.
3. Establish a joint ventures program to fund state and commercial/industrial sector projects demonstrating innovative energy conservation measures, clean sources of conventional fuel supply, and renewable energy supply.
- MEA should issue a solicitation to industry in the State of Maryland seeking proposals for joint venture projects that the State and industry can propose for federal, utility, private sector or foundation funding.
  - MEA should pay particular attention to the federal government programs managed by the U.S. Department of Energy's Office of Technical and Financial Assistance, and take the initiative in being a leading participant in the U.S. Environmental Protection Agency's new "Green Buildings" program.
  - The Maryland Assembly should be encouraged to appropriate funding for a joint venture fund that supports private sector technology development judged to be strategically important for Maryland's energy future. MEA should work with the Assembly to plan hearings and legislation for the joint venture program.
4. Facilitate the development of a "Baltimore County Clean Air Energy Initiatives" public-private partnership, to investigate ways in which the wise use of energy can contribute to meeting the county's air quality goals.
- A partnership should be formed among state government agencies, the City and County of Baltimore, private sector companies, utilities, and environmental and public interest organizations to examine the potential of new advanced energy technologies, including renewable resources, to contribute to meeting Baltimore's air quality goals.

The partnership should review the economic potential of backing out existing energy facilities with high emissions through application of new, cleaner supply systems (e.g., lower emission coal, steam-injected gas turbines, biomass power) and an "energy conservation power plant."

- The Maryland Department of the Environment should assemble a team to review the energy components of the South Coast Air Quality Management District plan for the Los Angeles Basin, and other such plans, to make recommendations to MEA regarding those energy-related options having high potential to address the air quality situation in Maryland and improve the energy efficiency and security of the Maryland economy.
5. Establish a solar appliance installers license, and require that all solar installations be performed by professionals who have the license.
- The Maryland Department of Employment and Economic Development should initiate a partnership with industry and educators to establish a state-wide solar appliance installers license. Training and certification would be required to provide consumer protection.
6. Create a utility solar water heating demonstration program.
- The Maryland Public Service Commission should establish a partnership between a state utility and the solar industry, to create a demonstration program on the value of solar water heating to electric utilities in Maryland.
  - A rebate should be established, based on system performance levels, and 20 to 50 systems installed by the end of 1993. Systems would have to meet certification requirements established by the SRCC OG300 standard. The partnership would work with industry to identify and qualify competent contractors.
  - The solar water heating initiative would include monitoring of the demand profile of conventional electric water heaters, and a comparison to solar water heaters suitable for Maryland's climate. The information gathered would be included in the utility conservation collaborative.
7. Establish a goal specifying what portion of the state's need for electricity capacity should be met through the use of renewable energy technologies.
- Once the energy assessment called for in Recommendation #1 of this document is completed, MEA and the Public Service Commission should form a partnership with the renewable energy industry to establish a practical goal for an amount of renewable energy electric power capacity that should be brought on line in Maryland over the next decade.

- Similarly, MEA and the Maryland Department of Transportation should establish a partnership with the renewable alternative fuels industry to develop a similar goal for clean, alternative fuels for the transportation sector.

**Related Initiatives Underway:**

- The National Association of State Energy Officials is establishing a corporation to identify and organize joint venture opportunities to be funded under the federal government Renewable Energy and Energy Efficiency Technology Competitiveness Act of 1989.
- The U.S. Department of Energy continues to make grants for demonstrations under the Clean Coal Technology program.
- Several utilities across the U.S. are investigating modular utility generation systems distributed throughout their grids.
- The Maryland-D.C.-Virginia Solar Energy Industries Association is organizing a Chesapeake Photovoltaic Initiative to identify and gain support for cost-effective photovoltaic projects. The Maryland Energy Administration is co-funding a PV pumping system for cattle watering to protect Chesapeake Bay watersheds. The solar industry in Maryland is also meeting with the Maryland Public Service Commission and utility companies about application of solar thermal technologies as demand-side management systems.
- The U.S. Department of Energy biomass energy programs continue to increase support for development and introduction of alternative fuels for the transportation sector and biomass fuel and power systems for the utility sector.

**STRATEGIC ENERGY INITIATIVES FOR MARYLAND**

**Recommendations of the  
Governor's Energy Task Force:**

**Industry**

## **RECOMMENDATION #6**

### **Establish a Maryland Center for Industrial Energy Efficiency.**

Establish a pro-active technology center for industrial firms, providing assistance and information pertaining to energy efficiency project funding (grants, incentives, rebates, etc.), energy-related legislative issues, and existing and emerging energy-efficient technologies. Basic funding for the Center would be from "member" industrial firms. Financial and technical support from the Electric Power Research Institute and the Gas Research Institute should also be sought, as should funding from other organizations (DOE, foundations, etc). The center should utilize existing resources to the fullest extent possible, including national technology information centers such as the Conservation and Renewable Energy Inquiry and Referral Service (CAREIRS) and the National Appropriate Technology Assistance Service (NATAS).

The technology center should be supported by a steering committee with representation from Maryland industry, utilities, higher education, and state government. It would be the committee's responsibility to ensure accuracy and keep the technology center up to date. In addition to the obvious benefits the Center will provide to local industrial concerns, the Center should be an asset to those trying to persuade industries outside of Maryland to relocate in the state.

**Mission Statement:** Provide a pro-active technology center for industrial firms of all sizes. The Center would offer assistance and information for implementation of energy efficient projects (grants, incentives, financing, rebates, etc.). The participating members would provide information to create a current data base of case studies and statistical history on technologies and experience in using them.

#### **Expected Results:**

- Improve industrial firms' operating costs to enable them to be more competitive.
- Establish open and meaningful communication on available technologies between the state, industrial firms, universities and utilities.
- Build awareness and a positive image for the State of Maryland in order to retain and attract business.
- Attract pilot programs and test sites for new technologies.

**Implementation Strategy:****Short-Term**

1. Establish a steering committee for the Center. The success of the Center depends upon the strength and commitment of the steering committee members, and on their ability to ensure that the information and other assistance provided by the center treats all energy resources and technologies objectively, focusing solely on the needs of industry. For this reason it is critical to have each organization appoint the appropriate decision- or policy-maker as its active steering committee representative.
  - The chair should be a prominent figure in the Maryland industrial community, as designated by the governor.
  - Another representative of industry should be designated by the Maryland Chamber of Commerce.
  - Two members should come from the utility business and be familiar with technical development and the conservation collaborative process. Ideally, one should come from an electric company and one from a gas company.
  - One member should be the Director of the Maryland Energy Administration (MEA).
  - One member should be the Director of the Office of Technology Development, State Department of Economic and Employment Development (DEED).
  - Other members should be the President of the Foundation for Manufacturing Excellence (FME) and the Director of Technology Extension Service at the University of Maryland.
2. Determine services to be offered.
  - Identify and meet with potential users to determine needs; obtain the names of the "Charter Companies" selected from Task Force Recommendation #7.

- Prepare list of services to satisfy needs.
  - Identify sources for the information.
3. Determine the budget.
- Identify costs.
  - Identify revenues sources.
    - Government
      - a. Department of Energy (DOE)
      - b. Maryland Energy Administration (MEA)
      - c. Universities
    - Private sponsors (industries and utilities).
  - Prepare pro forma statements.
  - Determine the Center's physical location and whether to include it as part of the Foundation for Manufacturing Excellence.

**Long-Term**

1. Prepare detailed overview of services to be offered.
- Statistical information and data on technical efficiencies
  - New technologies or applications
  - A current data base that would provide technical information to the industrial firms
2. Provide information to establish an industrial data base center.
- Grants
  - Rebates and incentives
  - Appropriate technologies

- Alternative energy utilization
  - Environmental issues/impacts
  - Research or project information
  - Supporting groups (Electric Power Research Institute and Gas Research Institute)
3. Implement organization.
- Prepare a list of members.
  - Determine staffing and hours.
4. Promote center.
- Publicize the benefits of the Center to industrial firms; utility companies; state, county and local government; and universities and colleges.

**Related Initiatives Underway:**

- Maryland gas and electric companies have existing access to technology data centers (the Electric Power Research Institute and the Gas Research Institute).
- Baltimore Gas and Electric and Delmarva Power currently have programs to provide industrial customers with technical support. Current plans of the BG&E collaborative include industrial audit components for two DSM programs being designed.
- Potomac Edison provides its industrial customers with process energy audits and technology demonstrations. The utility's existing efforts and information resources should facilitate implementation of this recommendation.
- Adopt-a-School programs and engineering fairs sponsored by local industry are some of the initiatives that currently link industry to education.

**Related Subcommittee Recommendations:**

*Recommendation #7: Recruit 15-20 "Charter Company" industrial firms to be the recipients of audits of their industrial processes, and to implement cost-effective energy measures.*



**RECOMMENDATION #7**

**Recruit 15-20 "Charter Company" industrial firms to be the recipients of audits of their industrial processes, and to implement cost-effective energy measures.**

The results of this initiative would serve as the basis for an industrial technology data base for the Center for Industrial Energy Efficiency. The Charter Companies would represent a statewide cross-section of businesses, including firms of various sizes and types. Maryland utilities would be asked to pre-qualify industrial firms in their service territories that were (1) interested in receiving a process audit, (2) likely to be able to significantly reduce their energy use through implementation of process efficiency measures, and (3) likely to implement some or all of the recommended measures. Funding and financing options for implementing recommended efficiency improvements would be identified for each firm.

Completion of efficiency improvements would be highly publicized and would be recognized by the governor. The successes of the Charter Companies in saving energy, lowering energy bills, and/or reducing emissions would be used to help promote the value of the Center to future users.

**Implementation Strategy:****Short-Term**

1. Pre-qualify the charter companies to obtain a state-wide cross-section of industrial firms:
  - Determine the 15 to 20 firms by having each utility select three to six participants that are
    - interested in receiving a process audit
    - likely to be able to significantly reduce their energy use through implementation of process efficiency measures
    - likely to implement some or all of the recommended measures.
  - Summarize the profile of the pre-qualified firms, to include industry type, size, equipment, proposed project, etc.
2. Conduct the energy process audits.

**3. Determine and acquire necessary resources:**

- Obtain reimbursement for the energy audits and implementation incentives, so that they correlate with the separate utilities' collaborative filings.
- Identify funding and financing options for implementing the recommended efficiency improvements.

**4. Publish results:**

- Publicize completion of energy efficient improvements and ensure recognition by the governor.
- Enter audit results into the Maryland Center for Industrial Energy Efficiency data base, to assist other industrial firms.

**Related Subcommittee Recommendations:**

**Recommendation #6:** *Establish a Maryland Center for Industrial Energy Efficiency.*

**STRATEGIC ENERGY INITIATIVES FOR MARYLAND**

**Recommendations of the  
Governor's Energy Task Force:**

**Buildings**

## **RECOMMENDATION #8**

**Encourage Maryland counties to adopt the Council of American Building Officials (CABO) model energy code with 1992-93 modifications, and encourage utilities to take a coordinated approach to providing incentives for builders/buyers of new homes that exceed the code.**

The Maryland Energy Conservation Standards Act (Article 78, Section 54J) requires all new construction to comply with the latest edition of the Building Officials and Code Administration (BOCA) Energy Code or its equivalent, as approved by the Department of Housing and Community Development (DHCD). Given the current changes in BOCA and CABO, DHCD staff should prepare an analysis of the differences between the two standards. When CABO code requires higher efficiency standards, local jurisdictions should be encouraged to adopt those standards.

When local jurisdictions have adopted more vigorous standards, the Maryland Public Service Commission should encourage utilities to offer incentives to homeowners and builders.

### **Implementation Strategy:**

#### **Short Term**

The Department of Housing and Community Development prepares and issues a comparative analysis of the energy conservation components of the Building Officials and Code Administration (BOCA) code and the Council of American Building Officials (CABO) code.

**RECOMMENDATION #9**

**Develop and implement a voluntary home resale inspection program tied to investment tax credits for efficiency upgrades made within one year of purchase.**

Working with local government officials, offer special training in how to evaluate a home's energy efficiency to individuals inspecting homes for prospective homebuyers. When presenting the results of the inspection, the inspectors would inform homeowners of areas in which the efficiency of the home could be improved and of relevant utility rebate programs to help finance such improvements. Offer an investment tax credit for conservation/energy efficiency upgrades made to newly purchased (resale) homes within one year of purchase.

**Quantification of Goals:**

- Beginning with the first year of implementation, 10% of resale homes and rental properties should be enrolled in the program. This number is to be adjusted incrementally every two years, with the ultimate goal of upgrading larger numbers of older homes and making them more energy efficient.
- A mechanism should be developed that would enable the buyer to obtain either an investment tax credit in the ensuing tax year or a low-cost loan that would pay for itself through energy savings within a five- to seven-year period.

**Resources Needed:**

- Human:** Existing utility company audit teams
- Funding:** A combination of investment tax credits (which would have to be legislated) and utility rebates for energy efficiency upgrades would be needed. Financing through energy efficient mortgages or utility company DSM programs are other options.

**Implementation Strategy:**

**Short-Term**

1. Introduce legislation, to be passed by the state legislature, that would create investment tax credits for energy efficiency upgrades that are made within one year of purchasing a home (resale). The legislation should require that a brochure describing the program be included in all settlement packets and be explained by title companies at the time of settlement.
2. Develop a brochure about the program that will be made available to all realtors in the state.
3. The brochure and any additional information about the program should be included in the new homeowner packets sent by the utility companies in the first month billing.

**RECOMMENDATION #10****Implement an energy-efficient home mortgage pilot program.**

Such mortgages would allow homebuyers to qualify for higher-than-normal mortgage loans (or lower-than-normal interest rates) when they purchase homes designated as "energy efficient." Mortgage loans are based in part on the amount of debt and ongoing expenses that the homeowner must be financially able to carry and still afford monthly house payments. The higher loan amount is justified because of lower anticipated energy bills associated with such homes, which lowers the homeowner's ongoing operating costs for the house.

The United States Department of Energy "collaborative" on energy efficient mortgages consists of representatives from the mortgage, building, utility and other interested industries. It is charged with the task of laying the groundwork for the general availability of energy efficient mortgages throughout the country. This collaborative has identified the two primary impediments to general availability as (1) the establishment of a standard, or alternate standards, to which homes throughout the country must be constructed in order to qualify for an energy efficient mortgage, and (2) the creation of a data base from which the secondary mortgage market can quantify the impact of energy efficient mortgages on the quality of its portfolios.

Under existing budget authorities of various federal agencies, under the provisions of current legislation pending before Congress, and with the support of the DOE collaborative, opportunities exist for the State of Maryland to lead the nation in implementing energy efficient mortgages by participating in pilot projects aimed primarily at quantifying the impact of the mortgages on the quality of the portfolios of the secondary mortgage market.

**Resources Needed:**

- Human:** A coordinator from the Maryland Energy Administration to promote the State of Maryland as a pilot project location for energy efficient mortgages. The recently approved pilot projects for the States of Wisconsin and Vermont should be investigated to determine the need for the involvement of developers, builders, and mortgage lenders in promotion of the State of Maryland as a pilot project locale.
- Funding:** Not Applicable; on the contrary, funds are likely to accompany selection as a pilot project site (Wisconsin received a \$100,000 grant from DOE for becoming a pilot project location.)

**Implementation Strategy:**

**Short-Term**

1. Identify a coordinator from the Department of Housing and Community Development (DHCD) to lead Maryland's efforts to be a pilot project state.
2. The DHCD coordinator should establish contacts with (1) appropriate officials from the States of Wisconsin, Vermont and other states taking leadership roles in this area, (2) the Alliance to Save Energy personnel involved in the energy efficient mortgage process, and (3) the DOE collaborative on energy efficient mortgages, to determine the specific action steps to be taken by the State of Maryland to be identified as a pilot project locale.

**Related Initiatives Underway:**

Legislation now before a Congressional conference committee would require home energy rating systems to be implemented.



**RECOMMENDATION #11**

**Implement a comprehensive program targeted at increasing the efficiency of low-income housing.**

**Resources Needed:**

**Funding:** A budget of approximately \$16 million is needed to implement this recommendation, not including the funds required to implement the relevant utility programs referenced. Funding options are included below.

**Implementation Strategy:**

1. Maryland utilities, in connection with the Maryland PSC should develop comprehensive programs to achieve improved energy efficiency in low-income housing. This should include the following:

- Ensure implementation of current utility plans to weatherize approximately 6,000 low-income units. There are a large number, estimated at 150,000, of low-income housing units in Maryland that are very energy inefficient and have not, for the most part, been weatherized. An option for some additional funding is to charge a higher fee to landlords who must register to buy low-income housing, and real estate companies who must register to manage it.
- Encourage utility companies to offer rebates to tenants and landlords for taking conservation/efficiency actions, including, for example, rebates for replacement of existing, inefficient furnaces with high efficiency furnaces. There are a large number of low-income housing units with very old and/or energy inefficient heating units, e.g., converted coal furnaces, gas space heaters, electric furnaces.
- Encourage utility companies to provide seminars on conservation and energy efficiency — to be held at the community-hall level with incentives (e.g., low-cost conservation kit) for low-income people to attend and hands-on demonstration of changing furnace filters, hot water spigot washers, etc.). Low-income households frequently high energy users. While there have been no conclusive studies showing that energy educational efforts in and of themselves result in significant energy use reductions by

participating individuals, such a connection is likely and in any case generally viewed as important to residential conservation programs. Recommended schedule for implementation is as follows:

- (1.) Schedule the seminars in each area where subsidized housing exists.
  - (2.) Invite low-income building owners and tenants to the seminars, to initiate a working relationship between the two with regard to energy efficiency.
  - (3.) Use the weatherization package currently being used in the Weatherization Assistance Program as the incentive to attract people to the seminar. If the tenant is below 150% of the poverty line, the package is free; if not, the landlord must reimburse the provider for the package.
2. Develop and implement an energy efficiency code for rental housing in Maryland, requiring that rental housing units be brought up to code when they are sold. Review and, if acceptable, adopt the plan used in the State of Wisconsin that requires upgrades to levels specified in an energy efficiency code whenever rental housing units are sold.
3. Require that all new tenant housing built with public money or applying for subsidy meet the CABO energy efficiency standard. In increasing the efficiency of any type of building, it is almost always more cost-effective to build efficient units than to make them more efficient after they are built. There are a large number of subsidized low-income housing units in Maryland that are very energy inefficient, that have been built with public money, and whose rental subsidies come from public funds.

**RECOMMENDATION #12**

**Develop mechanisms through utilities or financial institutions whereby residential and commercial customers can more easily finance conservation improvements.**

Encourage utility companies to institute programs that either (1) directly finance such improvements for the customer or (2) facilitate bank financing for the customer. The programs should be available to all segments of the residential market, including homeowners and landlords. They should provide special financing provisions for low-income families and rental properties.

**Resources Needed:**

**Funding:** Existing utility rebate and financing programs should be extended and expanded. Contractor participation through trade associations should be considered. Financing institutions would participate through energy-saving loan funds. Total funds required is not known at this time.

**Implementation Strategy:**

**Short-Term**

1. Extend rebate and financing programs to include setback thermostats for HVAC systems, timers for water heaters, and electronic ignition devices and flue dampers for furnaces. Goal should be minimum 10% energy savings for participants.
2. Focus on proper maintenance issue. Develop an HVAC system tune up program by offering utility rebates and discounts for work performed by participating, prequalified contractors, working through established trade associations. This program would be advertised both through utility bills and through local media as well as through participating contractors. Set goal of 15% participation.

3. Create incentives and provide financing (at commercial rates) for landlords to convert rental units to individual metering for both gas and electric. Financing should be more competitive than existing residential rates. Goal: 20% of existing centrally metered market converted over a five-year period.
4. Develop an energy efficiency rating system that considers high efficiency HVAC, hot water equipment, appliances, insulation, windows, doors, air sealing techniques and ventilation methods. Provide a formula that includes rewards and financing for both the residential new construction and retrofit markets.

**RECOMMENDATION #13**

**Create and implement training programs for building professionals, as a first step in developing initiatives to improve the energy efficiency of commercial and industrial buildings.**

The training program should be tied to state recognition/awards and innovative financing strategies. This and other related initiatives should involve the private sector and voluntary activities first, using regulatory (mandatory) measures only as a last resort. They should be characterized by flexibility and customer control, allowing the businesses to custom-design programs to meet their needs rather than be forced to fit into generic, rigid program structures. Whenever possible, the initiatives should be designed to enhance economic development and competitiveness.

Different initiatives may be needed to address different types of facilities, for example:

- state vs. county vs. private sector buildings
- new vs. old buildings
- large (e.g., office) vs. small (e.g., retail strip) buildings
- owner-occupied vs. tenant-occupied buildings

In addition to existing utility incentive programs, with innovative financing strategies, the training program for building operators should be established using the implementation strategies shown below.

**Resources Needed:**

**Human:** Trainers — instructors for training program

**Technology:** HVAC equipment — on site of participating companies

**Funding:** Private funding — seed money from individual company participants and/or a loan

**Implementation Strategy:****Short-Term**

1. Develop a position paper that includes the target audience, course topics and the development schedule. It will be used as one of the tools to educate the Board of Directors that the goal of the program is to transfer knowledge and provide training.
2. Create a charter authorizing the program and establishing the partnership, with Howard Community College to create the pilot.
3. Create an eleven-member Board of Directors that would ensure the continuity of the program with the following representation: 1 from the Howard Community College; 2 from the utility industry; 4 from facility management; 1 from institutions; 1 from industrial; 1 from commercial; 1 from public schools. The Board needs to be educated through the position paper and the charter to understand the goals of the program.
4. Develop the funding mechanism. The program is to be privately funded through the private sector. \$100,000 in seed money and tuition fees are needed to begin, part of which will be used to develop future courses on an on-going basis.

BG&E's CONSERVE 2000 is an additional source of funding through its O&M program, which involves an educational component. Scholarships are to be developed to allow qualified people to attend the appropriate training as offered by this program.

The program is to generate results by transferring knowledge and training people; it is important that the program also be resourceful in finding and using existing courses.

**STRATEGIC ENERGY INITIATIVES FOR MARYLAND**

**Recommendations of the  
Governor's Energy Task Force:**

**Transportation**

**The Task Force recognizes the importance of keeping a healthy and strong Transportation Trust Fund to provide needed transit and other transportation services. Recommendations by this Task Force are meant to be revenue neutral to this fund and to encourage a greater public/private partnership to achieve the goals of conserving/saving energy.**



**RECOMMENDATION #14**

**Strengthen the interagency planning coordinating group that has the charter to impact the transportation planning and infrastructure implementation aspects of continued state growth.**

The Growth Management Act of 1992 provides a structure for ongoing coordinated planning on a broad scale. This Act has been examined to understand how the relationships between the state, counties, and municipalities, as well as regional planning groups, will be defined, to determine whether the roles, responsibilities, authority, and interfacing structure are appropriate specifically for coordinated transportation planning. MDOT, MEA, DEED, MDE and other cognizant agencies should focus on the transportation aspects of growth in the near term, because transportation infrastructure decisions often define later land use, growth patterns and environmental implications.

The Clean Air Act Amendments of 1990 have implications for land use and development, as does the Intermodal Surface Transportation Efficiency Act of 1991 and the Growth Management Resources Protection Act. However, within this context, the state should take a leadership role in working with the counties and regional planning groups to integrate the planning process and lay the proper foundation for an economically attractive yet energy and environmentally sustainable future.

The state currently has interagency planning activity but it is not formalized and there is no actual accountability or oversight process to ensure coordination. We recommend that leadership for this process be placed within the committee established by the Growth Management Resources Protection Act (GMRPA). Through the GMRPA Committee, MDOT should take a role to formalize relationships of land use, transportation, environment and other related issues in regard to land development and energy consumption/savings. MDOT should institutionalize the efforts of the GMRPA Committee in its plans and programs as established by Executive Order. Doing so will require a strong commitment to this process.

**Resources Needed:**

**Human:** No additional Human Resources required over that specified in the Growth Management Resources Protection Act.

**Implementation Strategy:**

All actions are complementary to the GMRPA Planning Functions that are underway:

**Short-Term**

1. Formalize the Interagency Planning efforts underway as a result of the GMRPA.
2. Provide for specific accountability within the Interagency Planning Group.
3. Provide an oversight function of the interagency planning activities. We suggest that MDOT provide this function for transportation and that MEA provide this function for energy.
4. Add a requirement to include energy resources consequences/analysis and intermodal transportation planning to activities of the Interagency Planning Group.
5. Add the Morgan State Transportation Management and Research Center as an ad-hoc member to the GMRPA Planning Group.

**Long-Term**

1. Continue the GMRPA Interagency Planning Group through implementation of the Clean Air Act Amendments of 1990 and the ISTEA requirements by the state. Maintain the GMRPA and Short-Term Requirements recommended by this task force.

**Related Initiatives Underway:**

- Growth Management Resources Protection Act (GMRPA)
  - This act requires local comprehensive plans to address the relationship between transportation aspects of growth consistent with seven "visions" of the Planning Act. The MDOT administrations will need to take an active role in this effort.
  - It also requires state agencies to review all infrastructure investments for consistency with "visions" and support of growth management. MDOT should strengthen it's review of the relationships between transportation improvements and energy resources.
  - The act became effective on October 1, 1992.

- MDOT is working with individual counties and regional planning agencies as required under the ISTEA to develop a statewide transportation plan.
  - MDOT is beginning to develop it's Maryland Transportation Plan--the statewide transportation plan required by the ISTEA. This statewide plan must be consistent with local and regional land use plans, must consider the effect of transportation improvements on land development, and must consider energy and environmental effects.
  - MDOT will be providing \$1.5 million over the next two years to support the Maryland Office of Planning's growth management efforts. The majority of this money will go to local jurisdictions to prepare transportation elements of master plan updates.

**RECOMMENDATION #15**

**MDOT, in consultation with other interested parties, should develop a comprehensive plan on advanced Transportation Systems Management (TSM), incorporating concerns regarding mobility, energy use, and environmental degradation.**

An action plan should be developed by mid-1993 to implement TSM measures. These measures should address the following:

1. **Increase usage of car pools and van pools.** Expand and enhance the State's current matching service for drivers/riders through the increased utilization of creative local government/state government/business partnerships. Such an effort may address barriers to wider use of these commuting approaches through initiatives such as liability insurance pools, loan funds or reduced loan rates for vehicle purchase.

Car/van pooling, as an approach to minimizing reliance on personal vehicles, is an excellent short term, low-cost approach to both reducing traffic congestion during rush hours and improving energy efficiency and air quality. Increased education is required to convince individuals to move to this commuting alternative. In the long term, financial incentives and/or penalties may be necessary to offset the perceived or actual inconvenience for many users.

**Quantification of Goals:**

Strive to increase alternative commuting by 20% over statutory requirements of Employee Trip Reduction Program.

**Implementation Strategy:**

- A. **Develop a revenue-neutral incentive program to achieve the goal of increased car/van pooling.**
- B. **Determine potential revenue loss from reduced VMT (vehicle miles travelled) as result of achieving Base Program in non-attainment areas plus goal as defined above.**
- C. **Explore new revenue sources from (1) Maryland Department of Environment administrative fees or assessment for non-compliance with Employee Trip**

**Reduction (ETR) requirements, recognizing impact on small business and (2) parking tax and income tax credit for transit use.**

2. **Evaluate other TSM measures using a comprehensive methodology and implement those measures that appear most promising.** In addition to mobility, the methodology should also address energy, environmental, and economic impacts of implementation. TSM measures include staggered work hours; delivery truck restrictions during rush hours; high occupancy vehicle (HOV) and bus-only lanes; directional lane control; creative tolls; an expanded program of variable message traffic information signs, radio 530 AM, and state police/SHA motorist assistance; and other options. TSM allows better utilization of existing highway/road systems and reduces congestion.

The use of TSM allows better utilization of infrastructure assets. Eventually, the decrease in congestion will be offset by rising vehicle miles of travel (VMT). Many TSM approaches are inexpensive and can be rapidly implemented. TSM measures that will reduce vehicle-related air pollution have recently been documented in a report by the USEPA/DOT. The continuing problem is that transportation planners do not have the TSM planning tools that let them evaluate, on a consistent basis, TSM measures from a combined mobility, energy, environmental, and economic impact viewpoint.

MDOT should take a stronger look at the energy savings components of TSM activities, and should maximize public/private partnerships and the involvement of local governments to implement them.

#### **Quantification of Goals:**

Expand the criteria upon which TSM options are selected.

#### **Resources Needed:**

<b>Human:</b>	Not yet quantified
<b>Technology:</b>	Energy and environmental modeling programs
<b>Funding:</b>	Matching funds needed for ISTEA funds.

#### **Implementation Strategy:**

1. Review existing TSM evaluation process with MEA/MDE/Office of Planning input. Make joint recommendation to governor on expanded criteria.
2. Monitor and evaluate research work performed by U.S. DOT and Intelligent Vehicle Highway System (IVHS) Association of America.

3. MDOT should move quickly to become part of the Highway Architectural Systems Research Program being sponsored by U.S. DOT.
4. Ensure participation by local governments.
3. **Continue the bicycle transportation coordinator.** Funding for such a position is available under the Intermodal Surface Transportation Efficiency Act. Given the value of bicycling as a feeder to mass transit, this opportunity should be pursued. One way bike/alternative transportation uses could be encouraged is through placement of bike racks at transportation facilities, based on demographics.

**Quantification of Goals:**

Increase bicycle use for commuting.

**Implementation Strategy:**

1. Seek municipal/county support of and involvement in bicycle promotional activities.
2. Identify communities having model bicycle programs. Identify candidate communities for bicycle programs. Prepare summary report.
3. Promote bicycle activity through community/marketing partnerships.

**Related Initiatives Underway:**

- The Clean Air Act Amendments require car pooling/van pooling programs for employers with over 100 employees in air quality non-attainment areas. The Regional Planning Council (Council of Governments) has previously structured a non-profit van pooling organization. The Maryland Department of Environment is responsible for the regulatory aspects of this program and will soon publish draft regulations.
- MDE is currently initiating an Employee Trip Reduction Program that includes car pooling elements.
- MDOT/SHA is currently evaluating many TSM options. However, they are not normally evaluated from direct energy and economic impact standpoint.
- BWI Commuter Assistance Center offers a Guaranteed Ride Home Program.

- MDOT is beginning to formulate a comprehensive program to assist employers in developing their ETR plans and reaching their goals of increasing vehicle occupancy.
- TSMs, also referred to as Transportation Control Measures (TCMs), will be investigated and evaluated as part of the transportation element of regional air quality plans that are now being developed for each of Maryland's non-attainment areas.
- MDOT/SHA's Bicycle Coordinator has been a full-time position since November 1991. (For the prior 10 years SHA has had a part-time bike coordinator.)
- MDOT/SHA offers the only toll-free bicycle hot line in the entire country: 1-800-252-8776.
- Staffing for the Governor's Bicycle Advisory Committee (BAC) is provided by the State Highway Administration's Bicycle Coordinator and the Intermodal and Statewide Planning Section. MDOT has been represented on the BAC since November 1991. The BAC's annual report was released in August 1992; it outlines goals and agendas for all subcommittees.

**RECOMMENDATION #16****Develop initiatives to increase the use of mass transit by Maryland citizens through comprehensive mass transit planning.**

This planning approach should not only consider enhanced mobility, but also improved air quality, coordinated land use and corridor/regional development, creation of new jobs, and creative financing approaches/techniques. Such initiatives could include expansion of existing systems — i.e., MTA light rail, MARC commuter trains, Baltimore/Washington Metro subway systems, and bus service/bus-only lanes — as well as advanced concepts such as MAGLEV. The use of creative user fee structures, discounted multiple-ride prepaid passes, and other incentives should also be considered.

Mass transit planning and implementation efforts should place more emphasis on time-efficient intermodal connections; increased feeder bus service to commuter/AMTRAK stations, better/more convenient station parking, secure bicycle parking at Park & Ride lots or rail stations (both within and outside of the central business districts) are options that should be considered in the near term to increase mass transit ridership.

Reducing the amount of time required to use mass transit and increasing its convenience will increase ridership and reduce current reliance on the private automobile for work-week commuting. In the long run, mass transit can be used as an instrument of change to focus commercial development into areas that are well-suited for infrastructure enhancements and higher density. Efforts must be made to enhance the mix of transit options, and of interconnections within various modes.

This recommendation has a significant fiscal impact. Additional funding sources will be required for implementation and we recommend that:

- user fees be used when possible and feasible
- the funding be related to the strategy
- care be taken not to erode funds available for currently planned programs.

Furthermore, over the long run, as energy efficiency strategies become effective, motor fuel tax revenues will decline. Attention will need to be given to replacing these lost funds so as to continue funding TSM and transit strategies.



**Quantification of Goals:**

Increase Mass Transit Usage by 3% per year over next 5 years.

**Implementation Strategy:**

1. Strongly encourage adoption of regional transit tax. Develop corresponding legislative program.
2. Investigate methods to encourage privatization of transportation services.
3. Establish a program to ensure the achievement of time-efficient intermodal connections, i.e., improved schedule interconnection implementation.
4. Utilize available resources from the Transportation Management and Research Center at Morgan State University. This requires 50/50 State cost share.
5. Make fare structure more user-friendly by standardizing fares and reducing multiple-zone structures. This measure can be achieved without significant revenue loss.

**Related Initiatives Underway:**

- MDOT has extensive efforts underway to expand and enhance transit service. Some of the projects underway include:
  - acquisition of new coaches and locomotives for MARC operation
  - expansion of parking at MARC's BWI, Odenton, Jessup, Halethorpe, West Baltimore, Perryville, Brunswick, Point of Rocks, Germantown, and Bowie stations
  - new MARC stations at Dorsey and Muirkirk
  - new commuter rail service to Frederick
  - extensions of light rail service to Penn Station, Hunt Valley, and BWI Airport
  - extension of the Baltimore Metro to the Johns Hopkins Hospital
  - planning for the extension of the Washington Metro from Addison Road to Largo
  - planning for transit service to Southern Maryland.
- The Mass Transit Administration (MTA) continually studies feeder bus services to existing stations and planned stations along fixed guideway extensions.
- MTA will continue to offer weekly and monthly transit passes for its bus, rail, and commuter rail services.

- MTA has initiated "Access to Jobs," a program designed to provide affordable transportation to Baltimore City residents looking for jobs in suburban activity centers.
- Implementation of recommendations in the Commuter Assistance Studies are underway in the major travel corridors. Specific improvements underway include:
  - better access to public transportation
  - an increase in the number of park-and-ride lots and spaces at those lots
  - bus turnarounds at park-and-ride sites
  - increased bus service.
- Enhancement program projects such as the Anacostia trail will provide bicycle and pedestrian access to three metro stations on the Green Line.
- Other customer amenities such as bike lockers and a pilot study to allow bikes on MARC trains will encourage use of mass transit, as well.
- Planning for transit facilities and services is an integral part of MDOT's new Statewide Intermodal Transportation Plan.

**RECOMMENDATION #17**

**Increase light-duty/personal motor vehicle efficiency through a creative program aimed at removing older, less efficient vehicles throughout the state and providing incentives for the private purchase of more fuel-efficient new vehicles.**

**Quantification of Goals:**

Reduce fleet vehicle average age by 25%.

**Resources Needed:**

**Funding:** Sources to be investigated. Private funding or public-private partnerships are preferable.

**Implementation Strategy:**

1. MDOT should review California's and International (e.g., Japan) experience/success in removing "Junkers" from the road.
2. Develop a program to pay owners of old, inefficient automobiles ("clunkers") to turn in their cars.
3. Ensure that the recently passed "gas guzzler/gas sipper" tax bill continues to be an important element of the State's tax package in future years and that its incentive provisions are strengthened in future years, as planned.
4. Support a "structured" increase in automobile corporate average fuel economy (CAFE) standards.

**Related Initiatives Underway:**

The Federal government and the State of California are currently examining automobile upgrade programs and strategies.

**RECOMMENDATION #18**

**Take actions as part of a comprehensive strategy to promote the use of alternative fuels for transportation.**

Greater use of alternative fuels for transportation is a vital part of a comprehensive State strategy to (1) ensure energy security through decreased reliance on foreign energy supplies, (2) ensure that limited energy resources are used most efficiently and most appropriately, and (3) minimize the negative environmental impacts of energy use by the transportation sector of the Maryland economy.

However, initiatives should be examined closely to ensure that alternative fuel solutions do not merely replace one pollutant with another. Alternative fuels for transportation include not only propane, liquified natural gas (LNG), compressed natural gas (CNG), methanol, ethanol, reformulated gasoline, etc., but also electric and hybrid electric vehicles.

While the current LNG program is a good start, the use of propane, methanol and CNG in mass transit vehicles is a nearer term solution than the LNG approach, primarily because of infrastructure issues. CNG and methanol busses could be used in the urban areas of the state and assist in reducing current air quality problems. The Clean Air Act Amendments will mandate the introduction and use of limited numbers of alternative fueled vehicles in 1998, with continuing increases through 2010. However, many of those vehicles are available today and infrastructure development is needed now.

This recommendation has a fiscal impact. Additional funding sources will be required for implementation and we recommend that:

- user fees be used when possible
- tax incentives and similar initiatives pertain to the capital investment side and keep the Transportation Trust Fund revenue-neutral
- the funding be directly related to the strategy
- care be taken not to erode funds available for currently planned programs

Furthermore, over the long run, as energy efficiency strategies become effective, motor fuel tax revenues will decline. Attention will need to be given to replacing these lost funds so as to continue funding the Transportation Trust Fund, TSM and transit strategies.

**Quantification of Goals:**

Accelerate by 2 years conversion of fleets of 10 or more vehicles to alternative fuels over the CAAA of 1990.

**Resources Needed:**

**Funding:** Additional revenues are required. Recommended sources include alternative fuels fees and user fees such as an air quality tax.

**Implementation Strategy:**

1. Establish an information bank within the Maryland Energy Administration, containing current data and information on all available alternative fuels, to aid fleet operators in determining the most appropriate fuels.
2. Establish a task force to determine "Fair" taxes (with consideration to policy implications) per unit volume of various alternative fuels versus gasoline. MEA should be established as the lead coordinating State agency for this task.
3. Undertake an analysis to determine the actual cost to the State of an alternative fuels legislation package that would offer incentives for investment and amend current laws that restrict the use of alternative fuels.
4. Investigate expanded alternative fuel fleets using private funding opportunities to reduce capital investment needs at the state/regional/local levels.
5. Continue an aggressive alternative fuels demonstration and utilization program directed at fleets and various alternative fuels.

**Related Initiatives Underway:**

- MTA already has a demonstration program underway for up to four LNG busses under a federal DOT grant. The MEA and MDOT are currently undertaking a program that will involve up to fifty alternative (LPG, LNG or CNG) fueled vehicles for state agency use, and is providing grant money for two pilot school bus projects. The State is a partner in the Chesapeake Consortium electric vehicle program. The state has an evaluation committee in place for operational/fleet issues.
- MDOT is reviewing regulatory prohibitions of alternative fuels in tunnels and for school bus fleets.
- The Maryland Clean Fuels Coalition has presented a package of model alternative fuels legislation for consideration to members of the State legislature.
- The State has an evaluation committee in place for fiscal policy issues.

**RECOMMENDATION #19****Support the development of state-based products and services that relate to the transportation future of Maryland and the U.S.**

The type of leadership role envisioned is one that creates/retains jobs in Maryland and that facilitates the transition of our many high-tech and defense industries to a peace-time or commercial market place economy. Examples of the opportunities that exist in this area include the local development of high-speed rail technologies, the conversion of the State's manufacturing concerns to support alternative fuels through supplying advanced hardware and vehicles, and the elevation of Morgan State University to a world-class transportation research institute.

With a history of being a technology leader in several areas, the State has an opportunity to be a leader in new technology that is aimed at solving our transportation and mobility problems. In addition, the conversion of plants such as the General Motors Broening Highway facility to produce alternative fuel/electric vehicles would ensure that this plant is not phased out during the downsizing by the parent company. State and county, as well as commercial fleets could represent a first and continuing market for these vehicles.

The development of a transportation research center at Morgan State University could be rapidly implemented, and joint State/Federal funding aimed at solving problems facing the State and region might be accessible. Demonstration programs involving new technologies and new management approaches could be easily implemented in Maryland and have national relevancy because of the State's geographic uniqueness and its urban and rural diversity that represent a "microcosm" of the U.S.

**Quantification of Goals:**

Stabilize loss of defense-oriented employment in Maryland by transitioning to transportation-related commercial production/employment.

**Implementation Strategy:**

1. DEED should take the lead, with input from MEA, MDOT and others, to study opportunities and develop an action plan with recommendations for transition of defense-oriented employment.

**Related Initiatives Underway:**

The major aerospace firms within the State are currently members of the MAGLEV USA Consortium. This group has a defined goal of the construction of a prototype MAGLEV system between Baltimore and Washington, DC. The MAGLEV technology would not only have a domestic market but also a significant worldwide market. The Federal government has over \$725 million authorized for this initiative over the next five years.

In the area of alternative fuels, electric and hybrid electric vehicles, the big three automakers as well as the major Japanese and European automakers have development and demonstration programs underway. Volkswagen has recently moved up the production date of its electric car to 1993 and Chrysler is a partner in the Chesapeake Consortium for the development and production of an electric drive train with Maryland-based Westinghouse for a new Chrysler van. Morgan State University has been designated by the Intermodal Surface Transportation Efficiency Act of 1991 as a national center for transportation research and management studies.

**Related Subcommittee Recommendations:**

*Recommendation #20: Encourage business development opportunities for environmental industries — firms that manufacture products that help businesses and citizens to use energy more efficiently and/or in a way that minimizes negative environmental impact.*



# **STRATEGIC ENERGY INITIATIVES FOR MARYLAND**

**Recommendations of the  
Governor's Energy Task Force:**

**Cross-Cutting Issues**

**RECOMMENDATION #20**

**Encourage business development opportunities for environmental industries — firms that manufacture products that help businesses and citizens to use energy more efficiently and/or in a way that minimizes negative environmental impact.**

This is a statewide initiative to attract, retain, and foster the development of such businesses, so that by encouraging energy efficiency and environmental improvement, economic development could result. Possible business opportunities include firms recycling businesses, electric vehicle production, the MAGLEV transportation option, photovoltaic cell module and system integrator production. Special attention should be given in this process to conversion of defense-related industries into viable energy-efficiency or environment-related firms.

The global market for environmental goods and services is now estimated to be in excess of \$200 billion. The market for energy related products in developing countries alone is estimated to be in excess of \$2 trillion over the next two decades. Other states, including Pennsylvania and Massachusetts, have recognized this enormous opportunity for new jobs and economic growth by forming new organizations and programs that support environment-related product development and marketing. Maryland, too, should be doing more to establish itself in this rapidly growing world market.

**Quantification of Goals:**

To attract, retain, and foster the development of businesses linked to energy efficiency and environmental improvement. Maryland should share in the global market for environmental goods and services.

**Resources Needed:**

- |                            |  |
|----------------------------|--|
| <b>Human:</b>              | A full-time person in DEED and some time from departmental staff already in place. One person must be in charge and responsible to accomplish the action steps listed. |
| <b>Technology/Funding:</b> | Technology and funding needs can only be assessed by DEED.   |

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A full-time person in DEED and some time from departmental staff already in place. One person must be in charge and responsible to accomplish the action steps listed.

**Technology/Funding:**

Technology and funding needs can only be assessed by DEED.

**Implementation Strategy:****Short-Term**

1. Designate a full-time official in the Department of Employment and Economic Development, responsible for promoting environmental and energy efficiency related products and services in Maryland. Initial tasks would include the following:

- Compile a comprehensive directory specifically focused on Maryland companies specializing in renewable and alternative energy, energy efficiency, and environmental technologies.

Several Maryland companies now specialize in the development, commercialization and delivery of renewable and alternative energy systems, energy efficiency technologies, and environmental technologies that either reduce or control pollution. Such systems and technologies including fuel cells, solar photovoltaics, catalysts, and chlorofluorocarbon recycling equipment. A preliminary survey conducted in 1990 identified 75 such companies but the actual figure is likely to be much higher; a survey recently conducted by Pennsylvania's energy and environmental industry identified over 1,600 companies. (For comparison, Maryland's biotechnology industry, which has received relatively large state support, is composed of roughly 100 companies competing for a much smaller global market.)

- Assess Maryland's emerging alternative energy and environmental industry to identify opportunities for public/private cooperation.

This analysis would include both a survey of Maryland's environmental companies as well as a series of interviews with representatives from a selected subset of Maryland environmental companies, to identify barriers to future company growth, highlight successful Maryland environmental businesses, and suggest strategies and environmental policies the state might consider to stimulate this industry.

- Create a "Success Stories Bank" that would feature information about Maryland companies that have successfully reduced their energy usage through energy efficiency technologies, are using renewable and alternative energy systems, or have adopted pollution prevention initiatives.

This Bank would provide detailed information about the successes of Maryland companies that have reduced their energy consumption, either through conservation or the use of energy efficiency technologies. The Bank would provide valuable information to industry, business and public groups that are seeking solutions to energy and environmental problems.

- Distribute awards for innovation and the development of new energy and environmental technologies.

The Governor should recognize researchers and businesses who develop new or improved environmental technologies and alternative energy and energy efficiency products. There should be separate categories for research and commercial product development.

- Sponsor environment and energy trade shows.

The Department of Employment and Economic Development should organize trade shows for environmental and energy-related products and services. These products should be included in any trade missions to other countries.

Because alternative energy and environmental technologies have a high export potential, the industry directory recommended above should be printed in several languages including Chinese, Japanese, Korean, Spanish, and Russian for distribution to visiting foreign delegations, at international energy and environmental trade fairs, and on international trade missions.

**Long-Term Strategies****1. Consider establishing "Green Industrial Parks."**

Many states are now developing "green" industrial parks equipped with the latest energy saving technologies as a center attractive to environmentally-minded companies. Such parks have a significant portion of their energy needs met by renewable energy power or heating, and typically attract businesses wishing to link themselves to environmental activities for marketing purposes.

**2. Expand the existing "Energy and Environmental Extension Service."**

An energy and environmental extension service would provide valuable information about the use of renewable and alternative energy systems, energy efficiency, chlorofluorocarbon recycling, pollution prevention, source reduction, and waste minimization and recycling. Such a service would help existing Maryland companies and businesses select the best alternative chemicals or processes and choose the best available energy technologies as well as comply with existing regulations.

In 1975, a federal law established an Energy and Environmental Extension Service, which now covers only some personnel costs. This action step would greatly extend and reinvigorate the existing program to meet today's needs.

**Related Initiatives Underway:**

In May 1990, the Center for Global Change developed a directory of Maryland firms offering environmental technologies and services.

**Related Subcommittee Recommendations:**

**Recommendation #6:** *Establish a Center for Industrial Energy Efficiency.*

**RECOMMENDATION #21A**

**Develop and implement a major communications/public relations campaign to promote all aspects of the governor's energy policy to all sectors of the economy.**

This would include a logo that would appear on all materials related to the policy initiatives, and on all promotional materials and advertisements. Also key to the campaign would be awards programs to recognize outstanding achievements in energy efficiency on the part of various Maryland businesses, communities, organizations, and individuals.

There is currently little incentive on the part of the public to conserve energy. There is a lack of understanding of the nation's energy supply, both present and future, and low fuel costs encourage fuel use. Short of a catastrophic event such as the 1973 fuel crisis, there will be no sudden awakening to the problem. Efforts must be made to improve supply, to make industry more efficient and energy conscious for economic reasons, and to build new and remodeled properties that are energy efficient. The most basic need is to change public behavior.

Change in public performance will come only through citizen involvement. Citizen participation will stimulate greater awareness of current energy issues and encourage conservation by individuals. By focusing on energy as an issue, local committees and the statewide cabinet can better find creative solutions to use in achieving statewide goals.

The goal of the communications/public relations campaign is to increase awareness of the members of the public of:

- current energy usage
- future energy supplies
- energy conservation techniques
- alternative energy sources
- changes in life styles with minimal intrusion
- cross-cutting benefits to environment, economics.

**Quantification of Goals:**

5% gross decrease in statewide energy use in 24 months.

**Resources Needed:**

**Human:** Current government and private sector staffs with inflation allowances.

**Technology:** Existing

**Funding:** Existing. Future goal: government to set aside .01% of costs avoided for PR.

**Implementation Strategy:**

**Short-Term**

1. Define campaign
  - Conduct survey of Maryland citizens to determine knowledge and attitudes toward energy issues.
  - Define goals and objectives of PR programs.
  - Define themes and messages of campaign and gain general agreement on those by industry, government and non-profits.
  - Establish statewide energy conservation coordination mechanism for public relations.
2. Develop campaign
  - Develop media materials for general and special publics.
  - Select high visibility projects for future public/press exposure. Solicit additional resources from federal government, foundations.
3. Review/lock into "Energy Conservation Action Calendar" for upcoming 18 months. Kick-off campaign.
4. Review progress, modify plan as appropriate, issue report on status of program.



**RECOMMENDATION #21B****Implement a comprehensive public information program on energy efficiency and renewable energy.**

The information program should include a wide range of public information and outreach techniques and should deal with energy, energy conservation, and the impact of energy use and decisions on society (e.g., economics, environment). The program should have components that aim to increase energy awareness on the part of the general public and others that target specific population segments. The program should include a requirement that evaluations of its effectiveness be conducted and that procedures and mechanisms for making modifications as required be clearly set forth and implemented.

An educated and informed populace is necessary for Maryland's future energy well being. In the short term, informed consumers will take measures that will lower their energy costs and raise Maryland's energy and economic efficiency. In the long term, particularly for programs aimed at schools, a better trained populace will help make sustainable energy decisions with greater confidence. Specific initiatives are needed to address the educational needs of different segments of the population:

**1. Information programs targeted at groups outside of the educational system.** Targeted educational efforts are needed to impact the energy decisions of a wide number of groups, including legislators; manufacturers, distributors, dealers, and installers of energy-using equipment; building inspectors and codes officials; building professionals such as architects, engineers, developers, and builders; building managers and maintenance people; business owners and managers; state and local officials; and others.

**Quantification of Goals:**

To make every Marylander aware of the state and global impacts of each individual's energy use decisions. To influence each Marylander to make better energy decisions.

**Resources Needed:**

This recommendation has many short-term action steps that require less than one year to implement. Success on such a broad scale will have to be measured in terms of legislation passed; the numbers of manufacturers, distributors, dealers, and installers of energy-using equipment who carry and promote energy efficient products and systems; changes in building codes and accounting of change by building inspectors and code officials; amount or

percentage of reduced nitrogen fertilizer used on farms; the quantified energy savings achieved through actions taken by state and local officials, etc.

**Implementation Strategy:****Short-Term**

1. Encourage passage of an energy policy resolution by the General Assembly.

The resolution would be non-binding but would lay out priorities, reasons. Such a resolution should lay the foundation for future, specific support as needed. Legislators need to understand basic energy concepts.

2. Distribute specific available materials on energy issues and programs as a quick means of educating and motivating leaders.

Background on issues might come from *ENERGY*, a single-topic, quarterly publication from the Pennsylvania Energy Office that provides sound but easy-to-read information on energy as related to education, air quality, the economy, etc.

3. Convince a chain store(s) to make it easy for the consumer to identify and purchase energy-efficient and recycled-content materials and products.

Now that the Federal Trade Commission has worked out definitions usable across the country, stores may be willing to mark or identify products with a certain percentage of recycled materials or a high energy efficiency rating (an "E" in yellow or red and a recycling symbol in green on the shelf bar, not marking on each product or item).

4. Give priority to demand-side purchasing in both energy and recycling education.

Besides Government Services Administration purchasing mandates, bid specifications at all levels need review. Purchasing agents in government, businesses and institutions need morning or afternoon training sessions specializing in energy and recycling information. (See Recommendation #3 on recycling.)

5. Hire the unemployed to teach community groups about energy use.

A basic session can be taught to a corps of personable, capable unemployed persons. CPR (cardiac pulmonary resuscitation) techniques have been taught by hard-core unemployed who went on to regular jobs after the experience. (See Recommendation #11 on increasing energy efficiency of low-income housing.)

6. Conduct an energy workshop for state environmentalists and community leaders.

Perhaps four area workshops would draw more community leaders. Environmental groups already support energy efficiency and conservation but can best support state goals if they have easy-to-read facts and information about current efforts and available programs. Grassroots education by these groups helped to make recycling a success; energy conservation provides a similar challenge.

7. Show farmers how to reduce nitrogen fertilizer use, reducing energy use.

In agriculture, reducing nitrogen fertilizer use through educational efforts will reduce energy use. Between 1980 and 1990, \$11 million was spent to educate Iowa farmers on efficient fertilizer use without diminishing yields or profits. In 1989 and 1990 Iowa farmers saved \$80 million and cut fertilizer use 200 million pounds per year. This effort improves water quality as well.

8. Encourage home and interior magazines and other publications to feature articles on "Green Architecture."

"Green architecture" is already familiar to architects but clients and patrons must be influenced to make wise energy choices. Baltimore Gas & Electric's commercial energy-saving program has proven to be an educational tool for architects.

9. Use community college short courses on specific curricula to reach a target audience with great focus. (See Recommendation #13 on building professional training.)

10. Have current information and references available in a central location to function as an industrial education tool. (See Recommendation #6 on establishing a Center for Industrial Energy Efficiency.)

11. Seniors to seniors: Train senior volunteers to explain energy efficiency and conservation methods to older citizens in group residences.
12. Driver's license renewal: Provide an energy awareness leaflet related to vehicle impact on energy and the environment to individuals as their driver's license or registration is renewed. This leaflet must be brief, easy to read, and easy to understand.

**Long-Term**

1. Develop a comprehensive energy plan document.

When adequate information is available and legislative intent and agency analyses are assured, most states have organized the information as a guide or manual for statewide use. Some are highly technical, multi-volume; others are more informal and useful for general reference. All carry basic energy use data for the state and serve as a guide to state and local officials and all those promoting energy efficiency and conservation. Most have U.S. DOE grant funding.

2. Consider development of a DOE Region III publication on energy.

States differ but energy education should also be regional. Just as the Chesapeake Bay and air quality need regional efforts, a regional program or regional publication would be useful. In practical terms, the possible evolution of Pennsylvania's *ENERGY* into a regional publication should be explored.

**2. Information programs developed and implemented for grades K-12.** This effort should be developed through and coordinated with the existing energy/environmental program operated by the Maryland State Department of Education. The initiatives developed should involve creative, hands-on programming, designed to enlist the assistance of students in dealing with real and practical energy issues in their communities and in seeking solutions to energy problems. Such an approach is preferred to one that focuses on classroom-based education with little or no connection to everyday life. Portions of energy information programs targeted at students cannot be operated at all levels initially. They should be started in the early grades and as those children develop a solid understanding of issues, higher, more advanced programming should be developed.

- Goals**
- Develop instructional programs for elementary, middle and high school students.
  - Ensure that school buildings reflect energy efficiency and conservation standards as models in support of the educational programs.
  - Investigate ways in which educational programs can be taken home with the student and applied in the home as well.
  - Support and meet the qualifications set by the Environmental Education By-laws and the Maryland School Performance Program.

**Resources Needed:**

- Human:** Labor resources provided by Maryland Energy Administration, utilities, Team Energy Rebate Program consultants, Maryland Department of Education, other supplementary education groups, and public-private partnerships.
- Funding:** Utilities statewide to sponsor Scouting for Energy within respective service territories; coordinate Scouting for Energy with Team Energy Rebate Program (TERP) and utility-sponsored programs.

**Implementation Strategy:****Short-Term**

1. Launch "Scouting for Energy," a supplemental energy curriculum already developed by the Maryland State Department of Education, Maryland Energy Administration, and Delmarva Power.

Carefully developed as a comprehensive supplemental curriculum that can be used with other related programs, activities and concepts are presented. The curriculum should be introduced into at least four Maryland County school districts by 1993 and expanded to 60% participation by 1995.

- Launch a pilot Scouting for Energy program with major press event(s) coincident with Energy Awareness Month and the Governor's Energy Task Force Report.

- Strategy meetings with key representatives from State Board of Education, pilot county schools, utilities, Maryland Energy Administration (MEA), and Team Energy Rebate Program.
- Conduct seminars with local school districts to introduce the materials and answer questions; then, pilot the project in selected counties.

Long-term plans are to expand the pilot program to 60% of Maryland County school districts by December 1995.

2. Review and select from numerous curricula and supplementary plans that have been successful elsewhere in grades K-12.

Just as Prince George's county schools have developed an extremely successful energy saving program that will be used elsewhere, we should take advantage of the best of what works whenever it suits our purposes.

3. Have teachers meet with government and utility personnel involved with conservation programs.

This might lend immediacy and motivation for teaching about energy use. Goals/rationale must be understood. Teacher training is important but current funding is a problem.

4. Establish an action-oriented advisory board under the direction of the individual at the Board of Education who is responsible for science/ environmental education.

No one should be on the Board unless a responsibility has been assigned and accepted. Responsibility for specific aspects of the energy education program, serving as a liaison between schools and their programs, coordinating parent involvement — priorities and programs must be pre-arranged with each Board member assigned specific achievement goals and responsibilities. Commitment and action are needed for a good beginning.

5. Provide energy efficiency and conservation information to all student environmental clubs in Maryland; then, challenge the groups to find projects that suit their area schools.

Many clubs have strong recycling groups and are already experienced in promoting environmental goals. Energy issues are linked to recycling, saving natural resources and energy used in first-time manufacture.

6. Coordinate an energy efficiency logo contest.

Energy efficiency, education and promotion need a logo, as mentioned in Recommendation #21A. Our school youngsters might provide one for us through a contest with an appropriate prize for the winner. Perhaps a rap song contest would stimulate interest. Proposed community service in the upper grades will involve some students in hands-on energy action.

**3. Information programs specifically designed to encourage middle and high school students to use transportation resources more efficiently.** Such programs would include at least two main goals: to encourage use of public transportation and to encourage efficient operation of motor vehicles. Essay contests, poster contests and other means should be used to encourage use of public transportation rather than the private automobile for high school students. Involve municipal, county, and state boards, commissions and agencies in the program, and develop an incentive system for using public transportation. Involve students in the workings of the foregoing organizations for purposes of energy awareness.

Education on the energy, environmental, and cost impacts of operating motor vehicles. This may be implemented through drivers education programs in or outside of schools, and/or as part of a more comprehensive energy/environmental curricula for schools. Such programming would sensitize future consumers regarding the implications of their mobility choices. It is preferable that these issues be dealt with in the context of a drivers education program in the schools. The increase in awareness of our future drivers about their decisions and the impact they have on the environment and energy use would lay the ground work for a better-educated consuming public. The increase in safety associated with a mandatory driver education program also produces a benefit to the state. Safe driving and an understanding of the energy/environmental/cost consequences of motor vehicle ownership should be viewed as important life skills/knowledge and should be taught in our secondary school systems.

**Quantification of Goals:**

Increase use of public transportation where available. Decrease the vehicle miles travelled by high school age drivers through education about energy, environmental and cost impacts of operating motor vehicles. Encourage the use of bicycles. Include energy/environmental information in driver's education requirements.

**Resources Needed:**

**Human:** Review person from MDOT and the Department of Education. Program plan development person in math and teacher training.

**Technology:** Printing

**Funding:** Use of present staff. Civic groups should be encouraged to support projects of particular interest to them. Each jurisdiction has different circumstances and different support organizations.

**Implementation Strategy:****Short-Term**

1. **Public Transportation.** The survey suggested in Recommendation #21A1 should include key questions that would provide information needed in the implementation of Task Force recommendations. For example: "What would make you or your student family members use public transportation?" At the very least, a questionnaire should be sent to parents and students in schools where public transportation is available. (See Recommendation #16 on public transportation.)
2. **Math/vehicles/education:** Cars are so important in American life that societal responsibility should begin early. Energy impacts of automobile use should be woven into math problems and concepts at all grade levels, 4-12. The true cost of vehicle purchase, insurance, operation and maintenance; emission figures for one vehicle, a jurisdiction's vehicles, the state's; repair costs, hospital accident and insurance costs — all can be worked into everyday exercises appropriate to each grade level.
3. **Consult insurance firms and the Commissioner** to see if incentives for low-mileage driving can be linked to lower insurance rates for young drivers. This incentive might encourage parents to control vehicle miles travelled more carefully.



4. Extracurricular activities are one reason students drive to school. At the beginning of the year, have activity advisors explain the energy impacts of vehicle use and try to initiate car pooling by students based on area residence.
5. If bicycles are used, racks must be provided. Parents and schools are wary of safety and liability issues, both personal and property, but in some areas, biking should be strongly encouraged. Material available through the MDOT bicycle and pedestrian person should be sent to schools in these areas after contact has been made to judge interest. Student environmental groups should receive this biking information as well. Future information should include energy implications of bicycling. (See Recommendation #15 regarding the bicycle transportation coordinator.)

**Long-Term**

1. Drivers Training. The Task Force feels that the energy and environmental impacts of vehicle use should be included in the mandatory drivers education program for those from ages 16-18. By code (COMAR 11.12.04.37), any change requires the "accumulation of adequate and pertinent data upon which to base a meaningful study."

Request that those who best know the realities of Maryland's drivers education program — individuals from MDOT and the State Board of Education — determine what is required to incorporate energy/environmental information into the mandated program.

**Related Initiatives Underway:**

The Maryland Department of Education currently operates an energy/environmental program for grades K-12.

**RECOMMENDATION #22**

**Develop a comprehensive public sector initiative to ensure that state and local government facilities become a national model for energy efficiency.**

Provide technical assistance to encourage Maryland counties to adopt the energy efficiency standards for public buildings stipulated in recently passed legislation requiring improved energy efficiency in state facilities. In addition, each county should be presented with a comprehensive package of energy-saving opportunities. While these opportunities should include measures that yield short-term energy and energy bill savings, they should also include measures with longer paybacks. In this way, government can help demonstrate the feasibility, efficiency, and environmental benefits of technologies that may be brought to the marketplace in the near future.

**Quantification of Goals:**

Achievement of numerical goals set forth in Senate Bill No. 550 for both the state and local governments. This bill provides certain steps in an effort to reduce energy consumption per square foot from the 1992 levels as follows: (1) 15% by 1996 and (2) 25% by 2001.

**Resources Needed:**

**Human:** Additional staffing, and energy and engineering firms/consultants

**Technology:** Light meters, energy measurement devices, conservation software, energy accounting software, etc.

**Funding:** Sources of funding can be categorized as followed:

- Appropriations
- Utility demand side management rebate and incentive programs
- Performance contracting
- Existing energy financial assistance programs (i.e., CELP, State Agency Loan Program)

- Funds generated as a result of using agency incentive programs that allow retention and use of the dollar savings generated through conservation and efficiency efforts. *Note: The amount of the funds and staffing cannot be determined at this time.*

**Implementation Strategy:****Short-Term**

1. Implement the State Agency Facility Energy Management Plan and conduct training seminars.
2. Where expertise does not exist, have an energy and engineering firm or firms on retainer to assist in the design and specification of these new technologies.
  - Maintain effort out of the Maryland Energy Administration
  - Establish and disseminate the set fees (if any) and the procedures for their use for the local governments.
3. Mandate participation in all cost-effective utility programs that incur little or no cost to the jurisdiction to participate in.
  - Central air conditioner and/or heat pump cycling.
  - Large curtailable load programs.
  - Demand limiting alternatives for smaller facilities.
  - Renovation projects that can be financed without up-front monies.
4. Each local government should appoint a top level conservation and efficiency coordinator with the necessary authority and responsibility.
5. Set up open contracts for the purchase of materials or services needed to convert older equipment to efficient equipment, and so that the equipment is available after a conversion is completed. With open contracts, individual contracts will have to be created each time the same type of service is needed. Examples of areas in which such contracts are needed include the following:

- Lamp and ballast contracts (high efficiency products)
  - PCB disposal contracts (from old light ballasts).
6. Establish a requirement for the implementation of an energy accounting system in each local government. This system would be standardized using commercially available software.
  7. Establish within each local government a planning group that includes representation from all those who have responsibility for facility management, budget/finance, procurement, and legal matters, to develop a preliminary energy conservation and efficiency plan. Baltimore county is currently developing a three-year plan. Smaller counties could develop plans together, with one plan covering three or four counties.
  8. Set up guidelines within all state and local government engineering offices encouraging that both the jurisdiction and any outside contractors should work with the utilities to determine programs that would benefit them, when engaging in new construction, renovation, or the purchase of major energy-using equipment.
  9. Set up guidelines for the purchasing of equipment that can easily be replaced by energy efficient models when they are reordered. *(Note: This does not mean that items should not ever be replaced before they fail, but that if they fail before being upgraded, they should be replaced with energy efficient models.)*
    - Energy efficient motors
    - Energy efficient compressors
    - Energy efficient HVAC equipment
  10. Develop an educational program focused on all levels to increase the level of energy awareness and the knowledge base of responsible officials through the state and local government.
    - Target groups:
      - Top level officials
      - Facility/building operations personnel
      - Building occupants
      - Local government umbrella groups (i.e., MACO, MML)
    - Model from existing programs such as P.G. County School System's TERP Program.

11. Set conservation and efficiency goals at the top level of each local government. These must be quantifiable and measurable and include time frames. These goals should then be formalized through either an "executive order" or by the passing of legislation similar to Senate Bill No. 550. (See Quantification of Goals, above.)
12. Have state or local governments with experience in certain conservation projects assist other jurisdictions who have not yet been involved with such projects.
  - For example, the Maryland Energy Administration aiding the counties with lighting projects.
  - Anne Arundel County Schools helping other jurisdictions with Thermal Storage Projects.
13. Establish policy and procedures that maximize the use of available utility demand side management programs, performance contracting, and other financial resource program (i.e., CELP).
14. Develop personalized guidance documents for each local jurisdiction.
  - Use the State Agency Facility Energy Management Plan as a model.
  - Incorporate any other existing local government initiatives.
  - Develop it as a collaborative effort within the County Energy Council.

**Long-Term**

1. Implement the energy accounting system in each local government.
2. Develop a final energy conservation and efficiency plan that will be consistent with both operative and capital budget planning cycles in the future.
3. Develop methods for facilities/agencies to retain a portion of the energy savings they achieve.
  - Check alternatives provided in the State Task Force on Facility Energy Management guidance document.
  - Look at federal alternatives that have already been implemented.

4. Install meters or submeters in complexes so that usage can be tracked on a building-by-building basis.

**Related Initiatives Underway:**

- At the state level, a program is being developed to show state agencies how to identify energy savings opportunities at their facilities. This program could also be used as a model for county governments.
- There currently exists a statewide Energy Council on which each county is represented. Each county is responsible for developing its own energy conservation plan.

**Related Subcommittee Recommendations:**

Short-Term Action Step #10 above relates to Buildings Recommendation #13: *Create and implement training programs for building professionals, as a first step in developing initiatives to improve the energy efficiency of commercial and industrial buildings.*

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